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June 24, 2010

Ms. Carolyn J. Casey
RCRA Facility Manager
United States Environmental Protection Agency
5 Post Office Square, Suite 100
OSRR 07-3
Boston, MA 02109-3912

Re: Cummings Center, Beverly, MA

Dear Ms. Casey:

Enclosed, in connection with the above-referenced premises and pursuant to our ongoing communications arising out of EPA's audit of the former disposal site as part of its 2020 initiative, please find the following documents:

1. RCRA Corrective Action – Current Human Exposures Under Control;
2. RCRA Corrective Action – Migration of Contaminated Groundwater Under Control;
3. RCRA Corrective Action – Ecological Receptor Exposure Pathway Scoping Checklist;
4. Site Plan of Cummings Center; and
5. Correspondence from Kleinfelder, Inc. to the undersigned, dated June 23, 2010.

If you have any questions regarding the foregoing, or if you require any further information, please feel free to give me a call. Thank you in advance for your attention to these matters.

Sincerely,

CUMMINGS PROPERTIES, LLC



Craig J. Zjady
General Counsel

Enclosures

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DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Cummings Beverly Center (Former USM Machinery Division North Parcel)
Facility Address: 181 Elliot Street
Beverly, MA 01915
Facility EPA ID #: MAD 043415991

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

 X If yes - check here and continue with #2 below.
 If no - re-evaluate existing data, or
 if data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**¹ above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	—	<u>X</u>	—	_____
Air (indoors) ²	—	<u>X</u>	—	_____
Surface Soil (e.g., <2 ft)	—	<u>X</u>	—	_____
Surface Water	—	<u>X</u>	—	_____
Sediment	—	<u>X</u>	—	_____
Subsurf. Soil (e.g., >2 ft)	—	<u>X</u>	—	_____
Air (outdoors)	—	<u>X</u>	—	_____

X If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

_____ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s): See Attached Sheets

Footnotes:

¹ "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Question #2 – Rationale and References

The Cummings Beverly Center (Former USM Machinery Division North Parcel) is a subset of the entire property that was the Former USM Machinery Division. There is also a South Parcel of the Former USM Machinery Division which is located on the south side of Elliot Street (Route 62). Environmental response actions at the Former USM Machinery Division property have been performed under the requirements of the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. The property was reported to the Massachusetts Department of Environmental Protection (MADEP) in 1989. Extensive environmental site characterization occurred at the property from 1987 to 1990 with samples collected throughout the property primarily relating to soil and groundwater, but samples of surface water and sediment at the Upper and Lower Shoe Ponds (located on the property) were also taken. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. Sampling strategies and results are documented in "Phase II – Comprehensive Site Assessment, United Shoe Machinery Facility, Beverly, Massachusetts" by Haley & Aldrich, Inc., June 1991. As described in the Phase II report, soil samples from across the facility contained detectable levels of metals, VOCs, SVOCs, and TPH. PCBs were detected in only a limited number of soil samples and typically at concentrations less than 1 ppm. The majority of groundwater samples from across that site did not contain VOCs, PCBs, or SVOCs, but did typically contain some metals and TPH at low concentrations.

The Phase II report references a separate human health risk characterization report ("Phase II Risk Characterization for the USM Site" by Cambridge Environmental Inc., June 1991). Results of the risk characterization indicated that, for most of the USM facility, risk estimates were below the MCP risk criteria. The risk characterization was performed using an unrestricted use scenario (i.e., residential use), and identified possible future risk at five property locations under this scenario. SVOCs in soil were the primary contaminants contributing to the risk.

A Phase III Final Remedy Response Plan was completed in August 1992 by Haley & Aldrich. As future property development plans were for commercial use and did not include residential use, the Phase III report developed a remedial plan based on a restricted commercial use scenario. Under this scenario, soil remediation by excavation and on-site cold-mix batching was selected as the remedial alternative. Soil remediation would take place at the five locations as identified in the Phase II Risk Characterization report.

In April 1996, an Activity and Use Limitation (AUL) was placed on the entire Northern Parcel property to prohibit future residential site use and limit site use to commercial and industrial uses. As part of the AUL, use of the on-site ponds was restricted prohibiting recreational uses, such as boating, swimming, and fishing.

Soil remediation occurred from October 1996 to July 1997 and is documented in the report "Phase IV Final Inspection Report" by Haley & Aldrich, October 1997. The primary locations of soil remediation are shown in the attached Figure 1. The soil remediation goals were those as established by the MCP for non-residential use. These included a soil remediation goal for TPH of 10,000 ppm, a PCB goal of 2 ppm, and a goal for lead of 600 ppm. Confirmatory samples collected during soil remediation documented successful

achievement of these goals. Sample results are included in the Phase IV report. No groundwater remediation was necessary as existing groundwater well concentrations were in compliance with the MCP standards for non-drinking water. Oil non-aqueous phase liquid (NAPL) was encountered during the soil excavation of the area known as the former Chip Grind Shed. The NAPL source was believed to have been from oil in abandoned utility lines from the adjacent Powerhouse (now known as Building 900). Groundwater samples collected subsequent to the NAPL removal and soil excavation did not detect the presence of NAPL in any monitoring well or dissolved concentrations above MCP standards.

After the completion of the remediation documented in the Phase IV report, the North Parcel property was closed with a Response Action Outcome (RAO) Statement (Haley & Aldrich, October 1997) in accordance with the MCP. The RAO documented that a condition of no significant risk to human health existed at the site as long as the site use remained restricted in accordance with the AUL, which it has through the date of this audit.

Between 1997 and 2008, the AUL was amended five times to allow alternative uses at portions of the property that were originally not allowed under the AUL. These amendments included allowing the use of the interior spaces of all buildings for unrestricted use, the use of certain outdoor areas for child day care play areas, and the allowing of light recreational use of the land area surrounding the Upper and Lower Shoe Ponds. For each amendment, additional site assessment and/or risk characterization was performed to document that the removal of certain AUL restrictions would not result in a significant increase in total site risk.

As part of the 2008 AUL amendment process, soil gas testing was performed around the buildings to determine if vapor intrusion was present due to any residual contaminants that remained in the subsurface. The conclusion of the soil gas testing and risk characterization was that no substantial vapor intrusion was present in the buildings. This information is included in the Fifth Amendment to the Activity and Use Limitation, and was recorded with the South Essex County District Registry of Deeds in September 2008.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	___	___	___	___			___
Air (indoors)	___	___	___				
Soil (surface, e.g., <2 ft)	___	___	___	___	___	___	___
Surface Water	___	___		___	___	___	
Sediment	___	___			___	___	___
Soil (subsurface e.g., >2 ft)	___		___			___	
Air (outdoors)	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- ___ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- ___ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.
- ___ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and
Reference(s): _____

Footnotes:

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Current Human Exposures Under Control
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- 4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**⁴ (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and
Reference(s): _____

Footnotes:

⁴ If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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Environmental Indicator (EI) RCRIS code (CA725)
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5 Can the "significant" exposures (identified in #4) be shown to be within acceptable limits?

- _____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).
- _____ If no (there are current exposures that can be reasonably expected to be "unacceptable") - continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.
- _____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and

Reference(s):

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

 X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the at the Cummings Beverly Center (Former USM Machinery Division North Parcel) facility, EPA ID # MAD 043415991, located at 181 Elliot Street, Beverly, MA under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

 NO - "Current Human Exposures" are NOT "Under Control."

 IN - More information is needed to make a determination.

Completed by

Bruce A. Hoskins

Date

6/23/10

Bruce A. Hoskins, P.E., LSP

Senior Project Manager

Kleinfelder

Reviewed by

Craig J. Ziady

Date

6/24/10

General Counsel

Cummings Properties, LLC

Locations where References may be found:

Massachusetts Department of Environmental Protection Northeast Regional Office

205B Lowell Street, Wilmington, MA 01887

(978) 694-3200

Contact telephone and e-mail numbers

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(phone #) 978-486-0060

(e-mail) bhoskins@kleinfelder.com

(name) Craig J. Ziady

(phone #) 781-935-8000

(e-mail) craig@cummings.com

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Cummings Beverly Center (Former USM Machinery Division North Parcel)
Facility Address: 181 Elliot Street
Beverly, MA 01915
Facility EPA ID #: MAD 043415991

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?
- X If yes - check here and continue with #2 below.
- If no - re-evaluate existing data, or
- if data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

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2. Is **groundwater** known or reasonably suspected to be "**contaminated**"¹ above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

_____ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

 X If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): See Attached Sheets

Footnotes:

¹"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Question #2 – Rationale and References

The Cummings Beverly Center (Former USM Machinery Division North Parcel) is a subset of the entire property that was the Former USM Machinery Division. There is also a South Parcel of the Former USM Machinery Division which is located on the south side of Elliot Street (Route 62). Environmental response actions at the Former USM Machinery Division property have been performed under the requirements of the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. The property was reported to the Massachusetts Department of Environmental Protection (MADEP) in 1989. Extensive environmental site characterization occurred at the property from 1987 to 1990 with samples collected throughout the property primarily relating to soil and groundwater, but samples of surface water and sediment at the Upper and Lower Shoe Ponds (located on the property) were also taken. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. Sampling strategies and results are documented in "Phase II – Comprehensive Site Assessment, United Shoe Machinery Facility, Beverly, Massachusetts" by Haley & Aldrich, Inc., June 1991. As described in the Phase II report, soil samples from across the facility contained detectable levels of metals, VOCs, SVOCs, and TPH. PCBs were detected in only a limited number of soil samples and typically at concentrations less than 1 ppm. The majority of groundwater samples from across that site did not contain VOCs, PCBs, or SVOCs, but did typically contain some metals and TPH at low concentrations.

The Phase II report references a separate human health risk characterization report ("Phase II Risk Characterization for the USM Site" by Cambridge Environmental Inc., June 1991). Results of the risk characterization indicated that, for most of the USM facility, risk estimates were below the MCP risk criteria. The risk characterization was performed using an unrestricted use scenario (i.e., residential use). SVOCs in soil were the primary contaminants contributing to the risk. Groundwater risk was not quantified at that time as the groundwater concentrations were compared to drinking water standards, which were not considered to be applicable as the site was not located in a drinking water aquifer.

A Phase III Final Remedy Response Plan was completed in August 1992 by Haley & Aldrich. As future property development plans were for commercial use and did not include residential use, the Phase III report developed a remedial plan based on a restricted commercial use scenario. Under this scenario, soil remediation by excavation and on-site cold-mix batching was selected as the remedial alternative. No groundwater remediation was included in the remedial plan as the groundwater was not used for drinking water purposes.

In April 1996, an Activity and Use Limitation (AUL) was placed on the entire Northern Parcel property to prohibit future residential site use and limit site use to commercial and industrial uses. As part of the AUL, use of the on-site ponds was restricted prohibiting recreational uses, such as boating, swimming, and fishing.

Soil remediation occurred from October 1996 to July 1997 and is documented in the report "Phase IV

Final Inspection Report" by Haley & Aldrich, October 1997. No groundwater remediation was necessary as existing groundwater well concentrations were in compliance with the existing MCP standards for non-drinking water (Method 1 GW-2 and GW-3 standards). This conclusion was based on the original 1988 Phase II sampling as well as additional groundwater sampling and analysis performed in 1995. The 1995 groundwater sampling event confirmed that groundwater quality had not significantly changed since the Phase II and that site contaminants were relatively immobile and generally limited to soil.

Oil non-aqueous phase liquid (NAPL) was encountered during the soil excavation of the area known as the former Chip Grind Shed. The NAPL source was believed to have been from oil in abandoned utility lines from the adjacent Powerhouse (now known as Building 900). Groundwater samples collected subsequent to the NAPL removal and soil excavation did not detect the presence of NAPL in any monitoring well or dissolved concentrations above MCP standards.

After the completion of the remediation documented in the Phase IV report, the North Parcel property was closed with a Response Action Outcome (RAO) Statement (Haley & Aldrich, October 1997) in accordance with the MCP. The RAO documented that a condition of no significant risk to human health existed at the site as long as the site use remained restricted in accordance with the AUL, which it has through the date of this audit.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

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3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"² as defined by the monitoring locations designated at the time of this determination)?

_____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"².

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"²) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and

Reference(s): _____

Footnotes:

² "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

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4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and

Reference(s):

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

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5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater Alevel, the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale and
Reference(s): _____

Footnotes:

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

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6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented)?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment Alevels,@ as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and

Reference(s): _____

Footnotes:

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

Page 7

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

_____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and
Reference(s):

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 8

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

 X YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Cummings Beverly Center (Former USM Machinery Division North Parcel) facility, EPA ID # MAD 043415991, located at 181 Elliot Street, Beverly, MA. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

 NO - Unacceptable migration of contaminated groundwater is observed or expected.

 IN - More information is needed to make a determination.

Completed by B. A. Hoskins Date 6/23/10
Bruce A. Hoskins, P.E., LSP
Senior Project Manager
Kleinfelder

Reviewed by C. J. Ziady Date 6/24/10
Craig J. Ziady
General Counsel
Cummings Properties, LLC

Locations where References may be found:

Massachusetts Department of Environmental Protection Northeast Regional Office
205B Lowell Street, Wilmington, MA 01887
(978) 694-3200

Contact telephone and e-mail numbers

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REVISED – JUNE 2008

**EPA – New England
Resource Conservation and Recovery Act (RCRA) Corrective Action
Ecological Receptor Exposure Pathway Scoping Checklist**

Facility Name: Cummings Beverly Center (Former USM Machinery Division
North Parcel)
Facility Address: 181 Elliot Street
Beverly, MA 01915
Facility EPA ID #: MAD 043415991

Purpose:

This checklist is designed as a screening tool to help EPA-New England (EPA-NE) RCRA Corrective Action project managers determine whether there is the potential for complete exposure pathways between RCRA facility contaminants and ecological receptors (i.e., plants and wildlife).

Intended Use:

EPA-NE has recognized a need for a tool to guide its review of facility information pertaining to ecological risk assessment. This checklist is intended to guide EPA-NE review of available information on environmental conditions at a facility to determine whether further ecological assessment is necessary. Ideally, the checklist should be completed early in the RCRA Corrective Action process. If complete ecological exposure pathways are identified, an EPA or state ecological risk assessor should be involved in planning subsequent site investigation and ecological risk assessment.

Some state environmental agencies in New England have developed, or are in the process of developing, their own checklists or other tools for scoping ecological exposure pathways. Although EPA-NE believes the use of this checklist may be comparable and complimentary to other existing scoping tools used by states, the format and content of this EPA-NE checklist may differ from such state tools. Accordingly, this checklist is designed primarily for use by EPA-NE RCRA Facility Managers and their agents.

The checklist is considered a public document and, once completed for a given facility, may be included in the facility file. As a public document, the checklist may be shared with states, the regulated community, or the public for informational purposes.

Instructions:

All available relevant/significant information on known and reasonably suspected contaminant releases at or from the facility to soil, groundwater, surface water/sediments should be considered in completing this checklist.

Each page of the checklist includes a series of questions to be answered by the project manager completing the checklist. **In the “rationale and reference” section on each**

page, the project manager should summarize the supporting information used to answer the questions and clearly reference the document, as well as the page number, table number or figure number, where the supporting data can be found. Rationale and references should be clear and specific so that the findings of the checklist are transparent and able to be reproduced. Based on the answers to the questions on each page, the project manager can complete the "Preliminary Ecological Risk Evaluation" section of the checklist.

If the answer to any of the questions in the Preliminary Ecological Risk Evaluation section is "yes", the project manager should consult a U.S. Environmental Protection Agency (EPA) or state ecological risk assessor for further information. In this case, an ecological risk assessor should be involved as early as possible in planning the site investigation and further ecological risk assessment. If the answer is "no" to all three findings in the Preliminary Ecological Risk Evaluation section, complete pathways for contaminant exposure to ecological receptors are not reasonably expected at the facility, based on the data used in completing the checklist. Following its completion, the checklist should be included in the facility file to document the rationale for consulting an ecological risk assessor and focusing any subsequent ecological risk assessment, or the rationale for not proceeding further with ecological risk assessment.

Note. Please be advised that new data or new information could alter the findings of this checklist. The checklist should be revisited if new information that might change the checklist findings becomes available. Completion of this checklist is not intended to substitute for a Screening Level Ecological Risk Assessment (SLERA) or a Baseline Ecological Risk Assessment (BERA). Findings, documented by this checklist that ecological exposure to facility contaminants is not expected, are not considered final until a site-wide remedy decision made by EPA or a state environmental agency authorized for RCRA Corrective Action results in the termination of interim status of a facility or satisfaction with the conditions of a hazardous waste operating or post-closure permit

REVIEW OF FACILITY INFORMATION & CONCEPTUAL SITE MODEL

In order for ecological risks to exist there must be a potential for exposure of ecological receptors to contaminants. This portion of the evaluation is designed to assist in the identification of contaminated environmental media associated with a site.

Based on a review of the file and an understanding of the conceptual site model for the facility, please identify the environmental media present on or adjacent to the facility property which are known or reasonably expected to be impacted by contaminants from the facility. Place a check mark next to the media type. Additionally, please evaluate the potential for migration of contaminants from the site. Potential migration pathways include surface water flow, run off, groundwater flow, erosion, placement of fill and discharge locations. Please attach a figure of the site showing areas of potential contamination.

Media Potentially Affected by Facility Operations:	Potential for Migration	Migration Pathways
<u> X </u> Soil	Yes <u> </u> / No <u> X </u>	_____
<u> X </u> Sediment	Yes <u> </u> / No <u> X </u>	_____
<u> X </u> Surface Water	Yes <u> </u> / No <u> X </u>	_____
<u> X </u> Ground Water	Yes <u> </u> / No <u> X </u>	_____

Rationale and References: (Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found)

The Cummings Beverly Center (Former USM Machinery Division North Parcel) is a subset of the entire property that was the Former USM Machinery Division. There is also a South Parcel of the Former USM Machinery Division which is located on the south side of Elliot Street (Route 62). Environmental response actions at the Former USM Machinery Division property have been performed under the requirements of the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. The property was reported to the Massachusetts Department of Environmental Protection (MADEP) in 1989. Extensive environmental site characterization occurred at the property from 1987 to 1990 with samples collected throughout the property primarily relating to soil and groundwater, but samples of surface water and sediment at the Upper and Lower Shoe Ponds (located on the property) were also taken. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile

organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. Sampling strategies and results are documented in "Phase II – Comprehensive Site Assessment, United Shoe Machinery Facility, Beverly, Massachusetts" by Haley & Aldrich, Inc., June 1991.

In summary, based on the Phase II characterization and subsequent remediation (as detailed in the answers to upcoming questions in this questionnaire and as reviewed in connection with this audit), groundwater at the property has not been significantly impacted with contaminants, and soils have been remediated such that levels of contaminant residuals in soil are in compliance with the MCP for a condition of no significant risk. In addition, the majority of the soil area of the property is either paved or under buildings. There is no evidence of migration of contaminants in soil. Several metals have been historically detected at limited locations in the surface water and sediment of the ponds. However, based on the few exceedances of metals in surface water and sediment when compared to current regulatory criteria, and given the exceedances are less than an order of magnitude from the regulatory criteria, it appears unlikely that a significant ecological risk exists at this site.

HABITAT DOCUMENTATION

In order for ecological risks to exist there must be a potential for ecological receptors to come into contact with contaminated media. This portion of the evaluation is designed to assist in the identification of potential presence of environmental receptors associated with a site. It is predicated upon the assumption that if suitable habitat exists, then ecological receptors could potentially be present.

Please check the potentially impacted habitats present on, adjacent to, or immediately downgradient of the facility based on a site visit and an understanding of the site conceptual model. Also, indicate for each habitat whether the presence of site-derived contamination has been confirmed, is suspected, is not expected, or is unknown

Table 1: Summary of habitats and presence of Site-derived contamination							
Habitat type	Location			Presence of Site-derived contamination			
	At the site ^a	Adjacent to the site ^b	Not present	Confirmed	Suspected	Not expected	Unknown
MARINE/ESTUARINE ENVIRONMENTS							
Salt marsh			X				
Tidal rivers & streams		X				X	
Exposed mudflats			X				
Seagrass beds			X				
Rocky shoreline			X				
Other*			X				
FRESHWATER ENVIRONMENTS							
Wetlands			X				
Lakes & ponds	X			X			
Rivers and streams		X				X	
Vernal pools ^c			X				
Other*			X				
TERRESTRIAL ENVIRONMENTS							
Wooded			X				
Transitional			X				
Open field			X				
Other*		X				X	

^a "at the site" is defined as within the limits of the site perimeter or site fence

^b "adjacent to the site" is more loosely defined as terrestrial or aquatic habitat present in the immediate vicinity of the site

^c "vernal pool" refers to a temporary body of standing water often located in terrestrial habitat which appears in early spring but completely dries out by late spring-early summer. This type of habitat can be suitable and is critical for, among other things, amphibian reproduction.

* provide additional details

Habitat Documentation Rationale and References: (Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found.)

A full site description is included in the Phase II Comprehensive Site Assessment, United Shoe Machinery (USM) Facility, Beverly, Massachusetts as prepared by Haley & Aldrich, Inc., June 1991. A discussion of surface water hydrology is included in Section 5 of Volume 1 of the Phase II report. In summary, there are two surface water bodies located on the North Parcel – the Upper and Lower Shoe Ponds. The Upper Pond receives channeled and storm discharge from the North Beverly Brook Drainage Basin and the Bass River Brook Drainage Basin. The Upper Pond drains through a spillway into the Lower Pond, which drains over a dam and into the Bass River via a covered channel. The dam separates the fresh inland waters from the tidally influenced Bass River.

Regarding terrestrial environments, the vast majority of the Northern Parcel is either paved or contains buildings. There is a small amount of landscaped areas bordering the Upper and Lower Ponds. The Northern Parcel is located in a heavily developed area with a mixture of commercial and residential developments. The Beverly Golf and Tennis Club is located adjacent to the Northern Parcel to the west and contains open space used for the golf course.

EXPOSURE ASSESSMENT

In order for there to be a potential for ecological risks to occur at a site, there must be a potential for stressors, in this case chemicals, to be present where ecological receptors could come in contact with them. After reviewing the previous pages on Facility Information and Habitat Documentation, plus additional facility information as necessary, please answer the following questions in order to determine if ecological receptors are known or could reasonably be expected to be exposed to contaminants at or from the facility. **If any contaminant concentration data showing non-detect results are used to conclude that an environmental medium is not contaminated, please consult an ecological risk assessor to confirm that analytical methods used were adequate to detect contaminants at concentrations below levels of concern for ecological receptors. In addition, contaminants that have the potential to bioaccumulate cannot be eliminated from further consideration through the use of this checklist. Bioaccumulating contaminants must be carried through the ecological risk assessment.**

Surface Water Bodies

Sediments

- 1 a. Is sediment in surface water bodies known or reasonably expected to be contaminated due to releases at or from the facility? Releases from a facility may include but are not limited to: point source discharges, run-off from contaminated soil, groundwater migration, erosion, filling or aerial deposition resulting from air emissions. **Note: If sediment samples are taken adjacent to or downstream of the site, collection should take place in depositional areas present.**

Yes__ (Complete the remaining questions in this checklist and circle "Yes" in Surface Water Body Finding under the **PRELIMINARY ECOLOGICAL RISK EVALUATION** Section below.)

No **X** (Proceed to question 1b.)

Surface Water

- 1b. Is surface water known or reasonably expected to be contaminated due to releases at or from the facility? Releases from a facility may include but are not limited to: point source discharges, run-off from contaminated soil, discharge of contaminated groundwater, groundwater migration or aerial deposition resulting from air emissions. (Note: for surface water, dissolved metal data, from analysis of filtered water samples, is a better indicator of exposure than total metal data).

Yes__ (Complete the remaining questions in this checklist and circle "Yes" in Surface Water Body Finding under the **PRELIMINARY ECOLOGICAL RISK EVALUATION** Section below.)

No **X** (Proceed to question 1c.)

Groundwater

1 c. For groundwater discharging to surface water, is groundwater, at the point of discharge to the surface water body, known or reasonably suspected to be contaminated due to releases at or from the facility? Note: Because of the ability of certain sediments to accumulate contaminants, the need for sediment sampling in a water body should not be ruled out based on concentrations of suspected site related contaminants found to be below ecologically based ambient surface water quality criteria in groundwater which intersects surface water bodies.

- Yes (Complete the Surface Water Bodies Rationale and References section and the remaining questions in this checklist. Then, circle “Yes” in the Surface Water Body Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)
- No X (Complete the Surface Water Bodies Rationale and References section directly below, then proceed to the Surface Soil Section below.)

Surface Water Bodies Rationale and References: (Please summarize the rationale for the answers provided in the “Surface Water Bodies” section above. Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found. In addition, please discuss any site specific information, not specifically prompted by the question(s) above, that would help to clarify and/or qualify the finding.) Please add additional pages as necessary.

Extensive environmental site characterization occurred at the property from 1987 to 1990 with samples collected throughout the property primarily relating to soil and groundwater, but samples of surface water and sediment at the Upper and Lower Shoe Ponds (located on the property) were also taken. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. Sampling strategies and results are documented in “Phase II – Comprehensive Site Assessment, United Shoe Machinery Facility, Beverly, Massachusetts” by Haley & Aldrich, Inc., June 1991. The majority of groundwater samples from across that site did not contain VOCs, PCBs, or SVOCs, but did typically contain some metals and TPH at low concentrations.

Of specific note in the Phase II report are the results of surface water and sediment sampling in the Upper and Lower Ponds. A total of 14 pond bottom sediment samples and 14 surface water samples were collected in 1987-1988. Of these samples, one sediment sample (LPSD-03) contained levels of arsenic, cadmium, chromium, lead, copper, mercury, nickel, and zinc that are in exceedance of the current MCP Stage I screening levels for ecological risk assessment (most recently updated in January 2006), as shown below.

Metal	Concentration in	MCP Stage I Freshwater
-------	------------------	------------------------

	Sediment Sample LPSD-3 (mg/kg)	Sediment Screening Criteria (mg/kg)
Arsenic	35.8	33
Cadmium	12	5.0
Chromium	120	110
Copper	340	150
Lead	300	130
Mercury	0.37	0.18
Nickel	70	49
Zinc	530	460

Metals analysis in the remaining sediment samples had metals concentrations that were either not detected, or if detected, were below the MCP Sediment Screening Criteria. The average pond sediment metals concentrations were well below the sediment screening criteria.

Two surface water samples (LPSW-02, and LPSW-03) had levels of lead (8 ug/L and 8 ug/L, respectively) and zinc 170 ug/L and 150 ug/L, respectively) exceeding the current EPA ambient freshwater quality standards for chronic exposure of 2.5 ug/L and 120 ug/L, respectively. The locations of surface water and sediment samples are shown in the attached Figure 1; the locations were all within the Lower Pond.

The surface water and sediment results are detailed in Volume II of the Phase II report (text in Section 10-07 and data tables in Table V). Sampling in the Ponds is referred to as Section 1.

No additional pond surface water or sediment data has been collected since the Phase II assessment, and no ecological risk characterization was performed either in the Phase II or as part of this audit to quantify ecological risk. However, based on the few exceedances of metals in surface water and sediment when compared to current regulatory criteria, and given the exceedances are less than an order of magnitude from the regulatory criteria, it appears unlikely that a significant ecological risk exists at this site.

As the USM has not been in operation for over 20 years, any future sediment or surface water sampling in the ponds is unlikely to detect residuals of contaminants that were introduced to the ponds during USM operation that would impact current ecological conditions. Sediments that currently impact the pond aquatic organisms are the result of deposition that has taken place since the closure of USM. Similarly, the flow of surface water in the ponds is such that multiple total pond volumes have been discharged since the closure of USM; no current surface water in the ponds was also present in the ponds during USM operation.

Soil remediation occurred from October 1996 to July 1997 and is documented in the report "Phase IV Final Inspection Report" by Haley & Aldrich, October 1997. No groundwater remediation was necessary as existing groundwater well concentrations

were in compliance with the existing MCP standards for non-drinking water (Method 1 GW-2 and GW-3 standards). This conclusion was based on the original 1988 Phase II sampling as well as additional groundwater sampling and analysis performed in 1995. The 1995 groundwater sampling event confirmed that groundwater quality had not significantly changed since the Phase II and that site contaminants were relatively immobile and generally limited to soil. By meeting the GW-3 standards, groundwater contaminants are considered by MADEP to be at concentrations that will not migrate to surface water such that an exceedance of an ambient water quality standard will occur.

Surface Soil

- 2 a. Is surface soil (found at depths of 2 feet or less from the surface) known or reasonably expected to be contaminated due to releases at or from the facility?

Yes___ (Proceed to question 2 b.)

No **X** (Complete the Surface Soil Rationale and References section and the remaining questions in this checklist, then circle "No" under Surface Soil Finding in the **PRELIMINARY ECOLOGICAL RISK EVALUATION** Section below.)

- 2 b. Is all contaminated surface soil covered with buildings, pavement or other physical barriers that prevent plants or wildlife from being exposed to contaminants and that prevent migration of soil contamination into groundwater that could affect a surface water body?

Yes___ (Proceed to question 2 c.)

No___ (Complete the Surface Soil Rationale and References section below and the remaining questions in this checklist, then circle "Yes" under Surface Soil Finding in the **PRELIMINARY ECOLOGICAL RISK EVALUATION** Section below.)

- 2 c. Is an institutional control in place to ensure the maintenance of the barriers described above so that receptors will not be exposed to contaminated soil (i.e., ensuring that soil will not be exposed as a result of excavation, demolition or other activities and that pavement or other physical barriers will be maintained in good condition and that if soil is exposed, appropriate measures will be taken to address any ecological risks).

Yes___ (After completing the Surface Soil Rationale and References section below and the remaining questions in this checklist, circle "No" under Surface Soil Finding in the **PRELIMINARY ECOLOGICAL RISK EVALUATION** Section below.)

No___ (After completing the Surface Soil Rationale and References section below, and the remaining questions in this checklist, circle "Yes" under Surface Soil Finding in the **PRELIMINARY ECOLOGICAL RISK EVALUATION** Section below.)

Surface Soil Rationale and References: (Please summarize the rationale for the answers above. Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found. In addition, please discuss any site specific information, not specifically prompted by the question(s) above, that would help to clarify and/or qualify the finding. Please add additional pages as necessary.)

Extensive environmental site characterization occurred at the property from 1987 to 1990

with samples collected throughout the property primarily relating to soil and groundwater. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. Sampling strategies and results are documented in "Phase II – Comprehensive Site Assessment, United Shoe Machinery Facility, Beverly, Massachusetts" by Haley & Aldrich, Inc., June 1991. As described in the Phase II report, soil samples from across the facility contained detectable levels of metals, VOCs, SVOCs, and TPH. PCBs were detected in only a limited number of soil samples and typically at concentrations less than 1 ppm. Data results are included in Volume II of the Phase II report. Data results for identified areas of concern are included in Sector 4 (Northern Buildings) and Sector 5 (Central Plant Facility).

The Phase II report references a separate human health risk characterization report ("Phase II Risk Characterization for the USM Site" by Cambridge Environmental Inc., June 1991). Results of the risk characterization indicated that, for most of the USM facility, risk estimates were below the MCP risk criteria. The risk characterization was performed using an unrestricted use scenario (i.e., residential use), and identified the majority of possible future risk at five different property locations under this scenario. SVOCs in soil were the primary contaminants contributing to the risk.

A Phase III Final Remedy Response Plan was completed in August 1992 by Haley & Aldrich. As future property development plans were for commercial use and did not include residential use, the Phase III report developed a remedial plan based on a restricted commercial use scenario. Under this scenario, soil remediation by excavation and on-site cold-mix batching was selected as the remedial alternative. Soil remediation would take place at the five locations as identified in the Phase II Risk Characterization report.

In April 1996, an Activity and Use Limitation (AUL) was placed on the entire Northern Parcel property to prohibit future residential site use and limit site use to commercial and industrial uses.

Soil remediation occurred from October 1996 to July 1997 and is documented in the report "Phase IV Final Inspection Report" by Haley & Aldrich, October 1997. The primary locations of soil remediation are shown in the attached Figure 1. The soil remediation goals were those as established by the MCP for non-residential use. These included a soil remediation goal for TPH of 10,000 ppm, a PCB goal of 2 ppm, and a goal for lead of 600 ppm. Confirmatory samples collected during soil remediation successfully achieved these goals. Sample results are included in the Phase IV report.

After the completion of the remediation documented in the Phase IV report, the North Parcel property was closed with a Response Action Outcome (RAO) Statement (Haley & Aldrich, October 1997) in accordance with the MCP. The RAO documented that a condition of no significant risk existed at the site as long as the site use remained restricted in accordance with the AUL, which it has through the date of this audit.

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Current site use is commercial and the development is such that the vast majority of the site area (not including the Upper and Lower Ponds) is covered by buildings or pavement, and has been such for many decades. As such, there is no substantial space for a ecological habitat away from the Upper and Lower Ponds. The soil areas remediated in 1996-97 are all located under pavement, and any contaminant residuals remain isolated.

Subsurface Soil

- 3 a. Is subsurface soil (found at depths greater than 2 feet from the surface) known or reasonably expected to be contaminated due to releases at or from the facility?

Yes (Proceed to question 3 b.)

No X (Skip to the Subsurface Soil Rationale and References section. Then complete the remaining questions in this checklist and circle "No" under Subsurface Soil Finding in the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

- 3 b. Are the contaminated subsurface soils located in a setting where they could be exposed by erosion or that subsurface soil contaminants could be mobilized and transported via groundwater to a surface water body?

Yes (After completing the Subsurface Soil Rationale and References Section and the remaining questions in this checklist, circle "Yes" under Subsurface Soil Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

No engineering controls are in place. (Proceed to question 3c)

- 3 c. Is an institutional control in place to effectively ensure that contaminated soil will not be brought to the surface, as a result of excavation, demolition or other activities and, if applicable, to ensure that engineering controls are maintained and that if contaminated soil is exposed, appropriate measures will be taken to address ecological risk?

Yes (After completing the Subsurface Soil Rationale and References Section and the remaining questions in this checklist, circle "No" under Subsurface Soil Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

No (After completing the Subsurface Soil Rationale and References Section and the remaining questions in this checklist, circle "Yes" under Subsurface Soil Finding under the PRELIMINARY ECOLOGICAL RISK EVALUATION Section below.)

Subsurface Soil Rationale and References: (Please summarize the rationale for the answers above. Please clearly reference the document name and date as well as the page, table or figure number where any data considered in answering the above questions can be found. In addition, please discuss any site specific information, not specifically prompted by the question(s) above, that would help to clarify and/or qualify the finding. Please add additional pages as necessary.)

Extensive environmental site characterization occurred at the property from 1987 to 1990 with samples collected throughout the property primarily relating to soil and

groundwater. Samples were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. Sampling strategies and results are documented in “Phase II – Comprehensive Site Assessment, United Shoe Machinery Facility, Beverly, Massachusetts” by Haley & Aldrich, Inc., June 1991. As described in the Phase II report, soil samples from across the facility contained detectable levels of metals, VOCs, SVOCs, and TPH. PCBs were detected in only a limited number of soil samples and typically at concentrations less than 1 ppm. Data results are included in Volume II of the Phase II report. Data results for identified areas of concern are included in Sector 4 (Northern Buildings) and Sector 5 (Central Plant Facility).

The Phase II report references a separate human health risk characterization report (“Phase II Risk Characterization for the USM Site” by Cambridge Environmental Inc., June 1991). Results of the risk characterization indicated that, for most of the USM facility, risk estimates were below the MCP risk criteria. The risk characterization was performed using an unrestricted use scenario (i.e., residential use), and identified the majority of possible future risk at five different property locations under this scenario. SVOCs in soil were the primary contaminants contributing to the risk.

A Phase III Final Remedy Response Plan was completed in August 1992 by Haley & Aldrich. As future property development plans were for commercial use and did not include residential use, the Phase III report developed a remedial plan based on a restricted commercial use scenario. Under this scenario, soil remediation by excavation and on-site cold-mix batching was selected as the remedial alternative. Soil remediation would take place at the five locations as identified in the Phase II Risk Characterization report.

In April 1996, an Activity and Use Limitation (AUL) was placed on the entire Northern Parcel property to prohibit future residential site use and limit site use to commercial and industrial uses.

Soil remediation occurred from October 1996 to July 1997 and is documented in the report “Phase IV Final Inspection Report” by Haley & Aldrich, October 1997. The primary locations of soil remediation are shown in the attached Figure 1. The soil remediation goals were those as established by the MCP for non-residential use. These included a soil remediation goal for TPH of 10,000 ppm, a PCB goal of 2 ppm, and a goal for lead of 600 ppm. Confirmatory samples collected during soil remediation successfully achieved these goals. Sample results are included in the Phase IV report.

After the completion of the remediation documented in the Phase IV report, the North Parcel property was closed with a Response Action Outcome (RAO) Statement (Haley & Aldrich, October 1997) in accordance with the MCP. The RAO documented that a condition of no significant risk existed at the site as long as the site use remained restricted in accordance with the AUL, which it has through the date of this audit.

Current site use is commercial and the development is such that the vast majority of the

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site area (not including the Upper and Lower Ponds) is covered by buildings or pavement, and has been such for many decades. As such, there is no substantial space for a ecological habitat away from the Upper and Lower Ponds. The soil areas remediated in 1996-97 are all located under pavement, and any contaminant residuals remain isolated.

PRELIMINARY ECOLOGICAL RISK EVALUATION

Surface Water Body Finding:

Based on the information provided above, is further evaluation of risks to ecological receptors from contaminants in surface water or sediments of surface water bodies necessary?

Yes ☐ (Check "Yes" if the response to any of the questions above regarding Surface Water Bodies is "Yes")

No ☒ (Check "No" if the response to all of the questions above (1a, 1b, and 1c) regarding Surface Water Bodies is "No")

Surface Soil Finding:

Based on the information provided above, is further evaluation of risks to ecological receptors from contaminants in surface soil necessary?

Yes ☐

No ☒

Subsurface Soil Finding: Based on the information provided above, is further evaluation of risks to ecological receptors from contaminants in subsurface soil necessary?

Yes ☐

No ☒

Based on the information provided on the preceding pages, check the appropriate response:

X The answer was “No” for all three of the findings in this checklist (i.e., the Surface Water Body Finding, the Surface Soil Finding and the Subsurface Soil Finding). Therefore, based on the data considered in this checklist, ecological exposure to contaminants at or from the Cummings Beverly Center (Former USM Machinery Division North Parcel) facility, EPA ID # MAD 043415991, located at 181 Elliot Street in Beverly, MA is not reasonably expected and further ecological risk assessment does not appear necessary. **Please ensure that supporting information used to answer the questions in this checklist is summarized in the “rationale and reference” section on each page. Please also list the document title, as well as the page number, table number or figure number, where the supporting data can be found. Rationale and references should be clear and specific so that the findings of the checklist are transparent and able to be reproduced.**

Note: Releases from the facility must be adequately characterized, in accordance with EPA guidance, in order to make this determination. This checklist should be revisited if new information, that would alter the checklist findings, becomes available. In addition, the finding that ecological exposure to facility contaminants is not expected is not considered final until a site-wide remedy decision made by EPA or a state environmental agency authorized for RCRA Corrective Action results in the termination of interim status of a facility or satisfaction with the conditions of a hazardous waste operating or post-closure permit.

_____ The answer was “Yes” for any of the findings in this checklist (i.e., the Surface Water Body Finding, the Surface Soil Finding and the Subsurface Soil Finding). Therefore, further evaluation of ecological risk is recommended for the Cummings Beverly Center (Former USM Machinery Division North Parcel) facility, EPA ID # MAD 043415991, located at 181 Elliot Street in Beverly, MA. An EPA or state ecological risk assessor should be involved as early as possible in planning the facility investigation. This checklist can be provided to the ecological risk assessor to focus the ecological risk assessment on the potential exposure pathways.

Completed by B. A. Hoskins Date 6/23/10
Bruce A. Hoskins, P.E., LSP
Senior Project Manager
Kleinfelder

Reviewed by C. J. Zady Date 6/24/10
Craig J. Zady
General Counsel
Cummings Properties, LLC

REVISED – JUNE 2008

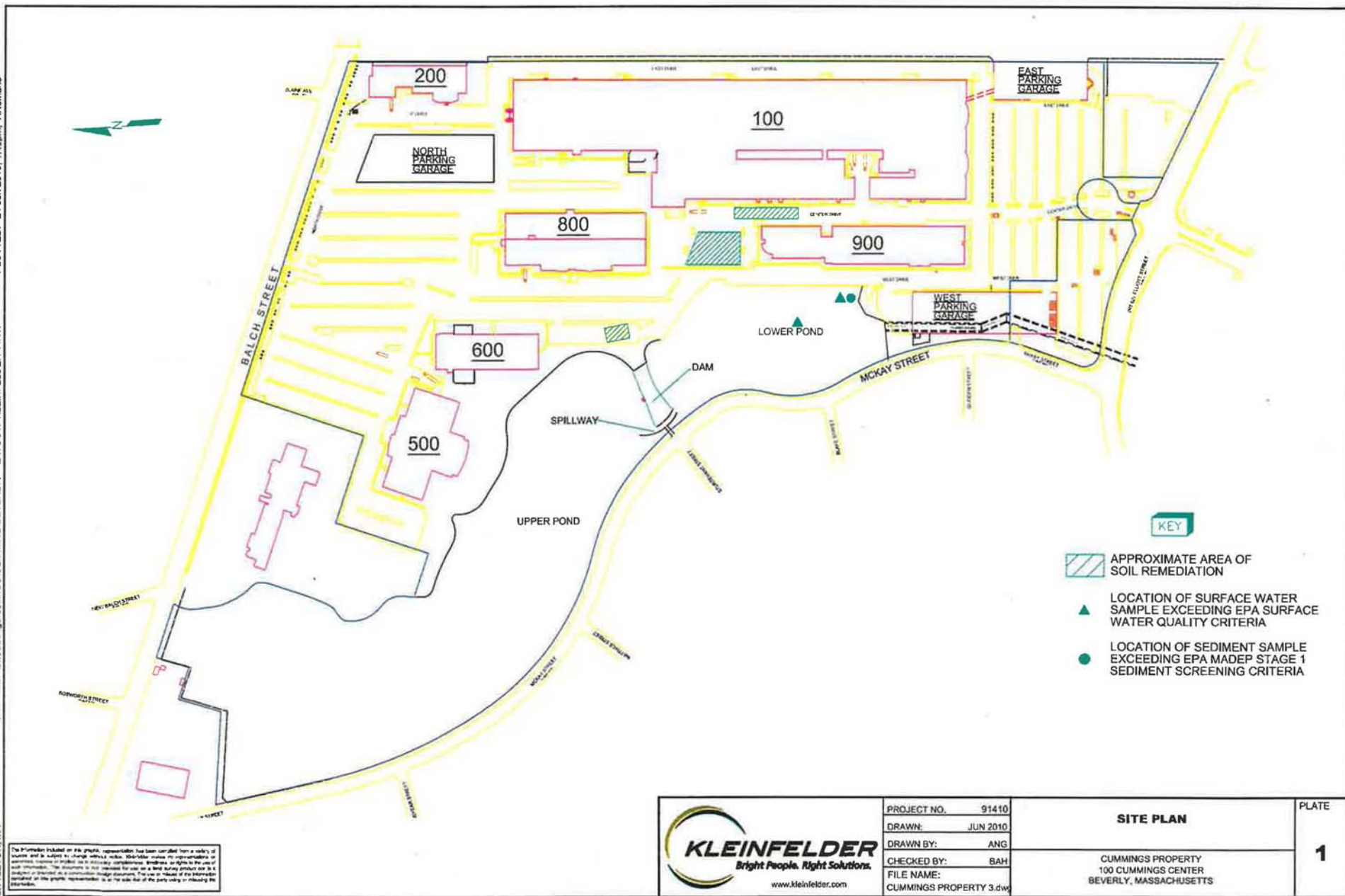
Locations where References may be found:

Massachusetts Department of Environmental Protection Northeast Regional Office
205B Lowell Street, Wilmington, MA 01887
(978) 694-3200

Contact telephone and e-mail numbers

(name) Bruce A. Hoskins
(phone #) 978-486-0060
(e-mail) bhoskins@kleinfelder.com

(name) Craig J. Ziady
(phone #) 781-935-8000
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June 23, 2010

Craig J. Ziady
General Counsel
Cummings Properties, LLC
200 West Cummings Park
Woburn, MA 01801

Re: RCRA Corrective Action Environmental Indicator Checklists
Cummings Beverly Center (Former USM Machinery Division North Parcel)
181 Elliot Street
Beverly, Massachusetts
EPA ID# MAD 043415991

Dear Mr. Ziady:

In response to the United States Environmental Protection Agency (EPA) audit request, Kleinfelder has prepared three Resource Conservation and Recovery Act (RCRA) Corrective Action checklists for the above-referenced property. These checklists are Environmental Indicator checklists for "Current Human Exposures Under Control", "Migration of Contaminated Groundwater Under Control", and "Ecological Receptor Exposure Pathway Scoping Checklist." These audit responses document that no significant human health or ecological exposures are present at the property relating to the former USM facility.

In brief summary, environmental response actions at the former USM Machinery Division property have been performed under the requirements of the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. The property was reported to the Massachusetts Department of Environmental Protection (MADEP) in 1989. Extensive environmental site characterization occurred at the property from 1987 to 1990. Soil remediation occurred from October 1996 to July 1997. In April 1996, an Activity and Use Limitation (AUL) was placed on the entire Northern Parcel property to prohibit future residential site use and limit site use to commercial and industrial uses. After the completion of the remediation, the North Parcel property was closed with a Response Action Outcome (RAO) Statement in October 1997 in accordance with the MCP. The RAO documented that a condition of no significant risk to human health existed at the site as long as the site use remained restricted in accordance with the AUL. Between 1997 and 2008, the AUL was amended five times to allow alternative uses at portions of the property that were originally not allowed under the AUL. These amendments included allowing the use of the interior spaces of all buildings for unrestricted use, the use of certain outdoor areas for child day care play areas, and the allowing of light recreational use of the land area surrounding the Upper and Lower Shoe Ponds.

These audit responses/checklists were completed under the direction of Mr. Bruce A. Hoskins, licensed site professional (LSP# 7109) of Kleinfelder. Supporting documentation for the responses included the existing environmental reports and files located at the MADEP Northeast Regional Office in Wilmington, MA. This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are




provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

Should you have any questions, please do not hesitate to contact the undersigned at (978) 486-0060.

Sincerely,
KLEINFELDER



Bruce C. Ross, LSP
Senior Project Manager



Bruce A. Hoskins, LSP
Senior Project Manager

enclosures